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UNITED STATES PATENT AND TRADEMARK OFFICE
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Applicant : Alexander MAASS

Serial No. : 10/510,398

Filed : October 5, 2004

For : METHOD AND DEVICE FOR DRIVER INFORMATION
AND FOR A REACTION WHEN LEAVING THE TRAFFIC
LANE

Examiner : Chuong P. NGUYEN

Art Unit : 3663

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APPELLANT'S APPEAL BRIEF
UNDER 37 C.F.R. § 41.37

S I R :

Applicant filed a Notice of Appeal dated June 7, 2007 (received at the PTO on June 11, 2007), appealing from the Final Office Action dated December 7, 2006 and Advisory Office Action dated June 5, 2007, in which claims 15, 16, 18, 19 and 21-24 of the above-identified application were finally rejected. This Brief is submitted by Applicant in support of his appeal.

I. REAL PARTY IN INTEREST

The real party in interest in the present appeal is Robert Bosch GmbH of Stuttgart, Germany. Robert Bosch GmbH is the assignee of the entire right, title, and interest in the present application.

II. RELATED APPEALS AND INTERFERENCES

No appeal or interference which will directly affect, or be directly affected by, or have a bearing on, the Board's decision in the pending appeal is known to exist to the undersigned attorney or is believed by the undersigned attorney to be known to exist to Applicants.

III. STATUS OF CLAIMS

Claims 15-28 are currently pending in the present application, among which claims 15, 16, 18, 19 and 21-24 are under consideration and being appealed. Claims 1-14 were canceled in the Preliminary Amendment dated October 5, 2004. Claims 17, 20 and 25-28 have been withdrawn from consideration by the Examiner in the Office Action dated June 9, 2006. Among the appealed claims, claim 15 is independent and claims 16, 18, 19, 21, 22, 23 and 24 depend on claim 15.

IV. STATUS OF AMENDMENTS

No amendment has been made subsequent to the final rejection mailed on December 7, 2006.

V. SUMMARY OF CLAIMED SUBJECT MATTER

With respect to independent claim 15, the present invention provides a method for at least one of providing driver information and performing a vehicle intervention when leaving a traffic lane, (original specification, p. 4, l. 24-27), the method including:

recording at least one boundary (Fig. 5, marking 402, 404) of the traffic lane; (Fig. 4, step 300; p. 8, l. 23-25; p. 10, l. 19-21);

determining an anticipated track of a vehicle (Fig. 5, track 406, 408), taking into account a future, anticipated path correction by the driver; (Fig. 4, steps 302-304; p. 7, l. 27 – p. 8, l. 3; p. 8, l. 26 – p. 9, l. 27; p. 10, l. 30 – p. 11, l. 20);

deriving at least one of the driver information (e.g., warning) and the vehicle intervention (e.g., automatic steering correction) from the at least one boundary of the traffic lane and the anticipated track of the vehicle; (Fig. 4, step 306; p. 7, l. 27 – p. 8, l. 3; p. 9, l. 27 – p. 10, l. 3; p. 11, l. 21-30); and

at least one of: a) providing the driver information (e.g., warning) when the vehicle one of leaves the traffic lane and threatens to leave the traffic lane (p. 9, l. 35 – p. 10, l. 3; p. 11, l. 21-30); and b) performing the vehicle intervention (e.g., automatic steering correction) when the vehicle one of leaves the traffic lane and threatens to leave the traffic lane (p. 9, l. 35 – p. 10, l. 3; p. 11, l. 21-30).

VI. GROUND S OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejections are presented for review on appeal in this case:

(A) Whether pending claims 15, 16, 18, 19 and 21-24 are unpatentable under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. and the written description requirement.

(B) Whether pending claims 15, 16, 18, 19 and 21-24 are unpatentable under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

(C) Whether pending claims 15, 16, 18 and 21 are anticipated under 35 U.S.C. § 102(b) by Breed (WO 00/54008).

(D) Whether pending claim 19 is unpatentable under 35 U.S.C. § 103(a) over Breed in view of Hiwatashi (U.S. Patent No. 6,370,474).

(E) Whether pending claim 22 is unpatentable under 35 U.S.C. § 103(a) over Breed in view of Jeon (U.S. Patent No. 6,487,501).

(F) Whether pending claims 23 and 24 are unpatentable under 35 U.S.C. § 103(a) over Breed in view of Russell (U.S. Patent No. 6,675,094).

VII. ARGUMENTS

A. REJECTION BASED ON ENABLEMENT REQUIREMENT

Claims 15, 16, 18, 19 and 21-24 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicant respectfully submits that the enablement requirement is fully satisfied for the reasons explained below.

First, with respect to the enablement requirement, the examiner has the burden to establish a reasonable basis to question the enablement. MPEP 2164.04, citing In re Wright, 999 F.2d 1557, 1562 (Fed. Cir. 1993). “The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.” MPEP 2164.01, citing In re Wands, 858 F.2d 731, 737 (Fed. Cir. 1988). “A specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented **must be taken as being in compliance with the enablement requirement** of 35 U.S.C. 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.” MPEP 2164.04.

In support of the enablement requirement, the Examiner contends that, regarding claims 15 and 16, “[o]ne skilled in the art could not understand [the] limitation or how and in what manner the ‘anticipated track,’ ‘anticipated path,’ or ‘anticipated steering reaction’ are determined, or based on.” However, Applicant respectfully submits that the entire disclosure of the present application directly involves the “anticipated track,” “anticipated path,” and “anticipated steering reaction,” and these claimed features are exhaustively detailed in the specification, some examples of which are provided below:

According to the procedure described below, a warning or an intervention in the vehicle movement takes place when it is estimated that the driver is no longer able to hold the vehicle in the lane using normal corrections. To do this, a check is made whether, while considering normal corrections of the driver, i.e. a certain steering angle which the driver normally uses to correct his track, the vehicle crosses the edge markings or not. The future track of the vehicle is then specifically calculated while taking into consideration these corrections by the driver that are to be expected, is compared to the detected edge markings, and a warning is emitted if the future track of the vehicle crosses the edge markings. In the determination of the value represented by the correction of the track by the driver that is to be expected, in one supplementary exemplary embodiment, the state of attentiveness of the driver is taken into consideration. In this context, the value is the greater (this corresponds to a more forceful correction), the more attentive the driver is, and the less, the more inattentive the driver is. In this context, the attentiveness of the driver is derived, depending on the exemplary embodiment, from steering wheel movements, head posture, accelerator motion, etc. (Original Specification, p. 4, l. 24 – p. 5, l. 9).

An especially simple implementation is that an average value of the correction measures of the driver, such as a steering angle value or a transverse acceleration value is predefined, and is taken into consideration in determining the path. (Original Specification, p. 2, l. 13–16).

In subsequent step 102 the future track of the vehicle is then calculated. The representation of this track also takes place using the function type that is used for the sequence of the lane markings. Accordingly, for example, from the current vehicle speed, the current steering angle or the transverse acceleration, etc, the parameters of the function are calculated which calculate the pattern of at least one track (track of the left and/or right vehicle edge) of the vehicle. An additional variable, that is evaluated for the calculation of the parameters, is the predefined correction value that is preferably a function of the attentiveness state, which is worked in, for example, by the correction of the steering angle. In subsequent step 104 the two functions are then checked as to whether they intersect or whether the future vehicle track lies across the pattern of the edge

markings beyond a certain measure, or whether the future vehicle track is approaching the edge markings up to a certain measure. (Original Specification, p. 6, l. 31 – p. 7, l. 12).

Figure 3 shows two traffic situations, according to Figure 3a, no driver warning taking place, and according to Figure 3b, a driver warning taking place. Future lane 202 calculated for vehicle 200, which is determined, as shown above, taking into account possible corrections by the driver (e.g. fixed steering angle value), in Figure 3a shows no crossing with the edge marking shown as the dashed line, whereas in Figure 3b such a crossing is present. According to that, in Figure 3b the driver is warned at the time shown or a vehicle intervention is undertaken, since the driver will probably not hold the vehicle in the lane only by normal corrections, while in Figure 3a the warning does not take place because the driver will be able to do so. (Original Specification, p. 7, l. 27 – p. 8, l. 3).

It is particularly advantageous if the extent of the assumed correcting motion of the driver is a function of his state of attentiveness. In the case of a watchful driver, the correcting movement to be expected will lie, for example, at a steering angle of 10^0 and a transverse acceleration of 2 m/sec^2 , whereas this value is clearly lower in the case of an inattentive driver. The state of attentiveness of the driver is derived, for example, from steering movements, accelerator movements, body posture, etc, and then, as a function of the degree of attentiveness, the correcting values are determined, and these are incorporated in the calculation of the future track of the vehicle. (Original Specification, p. 8, l. 5–16).

It is further assumed that the driver, if he were warned at the point in time shown, will, after ca 0.5 sec turn his steering wheel by a certain magnitude (e.g., ca 10^0) in the right direction, in order to avoid leaving the lane. In this way, . . . a new curve having a changed steering angle and/or a changed transverse acceleration is determined. (Original Specification, p. 11, l. 9-16).

As can be seen from above, the specification unequivocally describes the details of “determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver,” as recited in claim 15, and “the anticipated track of the vehicle is determined based on a future, anticipated steering,” as recited in claim 16. Furthermore, more detailed descriptions relating to the “anticipated track,” “anticipated path,” and “anticipated steering reaction” are found in exhaustive detail on page 8, l. 18 – p. 15, l. 2. In addition, the original description in p. 8, l. 26 – p. 9, l. 27 and p. 10, l. 30 – p. 11, l. 20 (in connection with Fig. 4, steps 302-306, and Fig. 5, track 406, 408) provide detailed explanation of determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver. Accordingly, it is clear that the original “specification disclosure . . . contains a teaching of the manner and process of making and using an invention **in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented,**” and since there is no reason to doubt the objective truth of the statements contained in the original specification, the present specification disclosure “**must be taken as being in compliance with the enablement requirement** of 35 U.S.C. 112, first paragraph.” MPEP 2164.04.

In view of the above-noted detailed description provided in the original specification regarding the “anticipated track,” “anticipated path,” and “anticipated steering reaction,” there is no reasonable basis to conclude that the original specification would not enable the claimed invention to one of ordinary skill in the art. For at least the foregoing reasons, Applicant submits that the rejection based on the enablement requirement is clearly incorrect and should be reversed.

B. REJECTION BASED ON WRITTEN DESCRIPTION REQUIREMENT

Claims 15, 16, 18, 19 and 21-24 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicant respectfully submits that the written description requirement is fully satisfied for the reasons explained below.

In order to satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can

reasonably conclude that the inventor had possession of the claimed invention. MPEP 2163 I, citing Moba, B.V. v. Diamond Automation, Inc., 325 F.3d 1306, 1319 (Fed. Cir. 2003). There is no *in haec verba* requirement. MPEP 2163 IB. In support of the rejection based on the written description requirement, the Examiner contends that, regarding claims 15 and 16, the term “anticipated” is new matter because the “original disclosure fails to provide adequate support for the term.” Applicant respectfully submits that the original disclosure clearly and explicitly supports the term “anticipated,” as evidenced by the above-quoted passages, one of which is reproduced below:

According to the procedure described below, a warning or an intervention in the vehicle movement takes place when it is estimated that the driver is no longer able to hold the vehicle in the lane using normal corrections. To do this, a check is made whether, while considering normal corrections of the driver, i.e. a certain steering angle which the driver normally uses to correct his track, the vehicle crosses the edge markings or not. The future track of the vehicle is then specifically calculated while taking into consideration these corrections by the driver that are to be expected, is compared to the detected edge markings, and a warning is emitted if the future track of the vehicle crosses the edge markings. In the determination of the value represented by the correction of the track by the driver that is to be expected, in one supplementary exemplary embodiment, the state of attentiveness of the driver is taken into consideration. In this context, the value is the greater (this corresponds to a more forceful correction), the more attentive the driver is, and the less, the more inattentive the driver is. In this context, the attentiveness of the driver is derived, depending on the exemplary embodiment, from steering wheel movements, head posture, accelerator motion, etc. (Original Specification, p. 4, l. 24 – p. 5, l. 9).

As can be seen from the above, the original specification clearly describes corrections by the driver that are to be expected and the associated future track of the vehicle, which disclosure absolutely supports the term “anticipated” recited in claims 15 and 16.

For at least the foregoing reasons, Applicant submits that the rejection based on the written description requirement is clearly incorrect and should be reversed.

C. **REJECTION OF CLAIMS 15, 16, 18 AND 21 UNDER § 102(b)**

Claims 15, 16, 18 and 21 were rejected under 35 U.S.C. § 102(b) as being anticipated by Breed (WO 00/54008). Applicant submits that this rejection should be reversed for at least the following reasons.

To anticipate a claim under § 102(b), a single prior art reference must identically disclose each and every claim element. See Lindeman Maschinenfabrik v. American Hoist and Derrick, 730 F.2d 1452, 1458 (Fed. Cir. 1984). If any claimed element is absent from a prior art reference, it cannot anticipate the claim. See Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997). Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claim invention, arranged exactly as in the claim. Lindeman, 730 F.2d 1458 (Emphasis added). Additionally, not only must each of the claim limitations be identically disclosed, an anticipatory reference must also enable a person having ordinary skill in the art to practice the claimed invention, namely the inventions of the rejected claims, as discussed above. See Akzo, N.V. v. U.S.I.T.C., 1 U.S.P.Q.2d 1241, 1245 (Fed. Cir. 1986). To the extent that the Examiner may be relying on the doctrine of inherent disclosure for the anticipation rejection, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Independent claim 15 recites, in relevant parts, “determining an anticipated track of a vehicle, **taking into account a future, anticipated path correction by the driver;** deriving at least one of the driver information and the vehicle intervention from the at least one boundary of the traffic lane and the anticipated track of the vehicle; and at least one of: a) providing the driver information when the vehicle one of leaves the traffic lane and threatens to leave the traffic lane; and b) performing the vehicle intervention when the vehicle one of leaves the traffic lane and threatens to leave the traffic lane.” As clearly stated in claim 15, and as exhaustively explained in the Specification, the present invention involves determining a future track of the vehicle, which anticipated future track takes into account the independent path correction that is expected from the driver, i.e., the future track of the vehicle is determined based on at least two components: a) the preliminary future path of the vehicle

calculated based on, e.g., the current vehicle speed, the current steering angle, or the transverse acceleration; and b) the anticipated path correction that is expected from the driver.

In contrast to the above-recited features of claim 15, Breed simply does not teach or suggest “determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.” While the Examiner cites several portions of Breed as teaching the above-recited claimed feature, e.g., Fig. 4; p. 4, l. 33-39; p. 31, l. 22-24; and p. 38, l. 6-14, these cited portions have nothing to do with “**determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.**” For example, p. 4, l. 33-36 merely indicate that “the operator will continue to control his vehicle provided he or she remains within certain constraints . . . [which] are like a corridor,” and “[a]s long as the operator maintains his vehicle within the allowed corridor, he or she can operate that vehicle without interference from the control system.” The description associated with Fig. 4 indicates that “[e]ach corridor is defined by lines 14,” and that an alarm may be sounded when the vehicle crosses one of the line 14, thereby alerting “the driver to . . . possibly correct the steering of the vehicle to return the vehicle to within the corridor.” (P. 38, l. 6-14). The passage of p. 31, l. 22-24 merely deals with “the problem of the incapacitated driver.” Accordingly, it is clear that nothing in Breed actually teaches or suggests “determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.”

To the extent the Examiner appears to contend in the Advisory Action of June 5, 2007 that Applicant is impermissibly reading unclaimed limitations into the claim from the specification, this contention is completely false: claim 15 unequivocally recites “**determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.**” and Applicant is arguing that this limitation is not taught by Breed. Accordingly, there is simply no reasonable basis for the Examiner to contend that Applicant is impermissibly reading unclaimed limitations into the claims.

Independent of the above, to the extent the Examiner contends that the “claims must be given their broadest reasonable interpretation,” Applicant notes that the claims should be given the broadest reasonable interpretation **that is consistent with the specification and**

the interpretation that those skilled in the art would reach. (See M.P.E.P. 2111, citing In re Hyatt, 211 F.3d 1367 (Fed. Cir. 2000), and In re Cortright, 165 F.3d 1353 (Fed. Cir. 1999)). However, there is no way that the Examiner's asserted interpretation of claim 15 would be within the broadest reasonable interpretation that is consistent with the specification and the interpretation that those skilled in the art would reach: claim 15 unequivocally recites "determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver," which means the anticipated path correction by the driver's own action is taken into account in determining the anticipated track of the vehicle. However, p. 38, l. 8-14 merely states that if "the driver is **falling asleep**, the **system . . .** will be continually detecting the position of the vehicle . . ., [and] the **system may be designed to sound an alarm** to alert the driver to the deviation or possibly even correct the steering of the vehicle to return the vehicle to within the corridor," i.e., the system disclosed in Breed merely detects the present position of the vehicle and either warns the driver or corrects the steering, but nothing in Breed (including p. 38, l. 8-14) suggests that any anticipated track of the vehicle is determined, or that any anticipated path correction by the driver is taken into any consideration, let alone that any anticipated path correction by the driver is taken into consideration in determining the anticipated track of the vehicle.

For at least this reason, claim 15 and its dependent claims 16, 18 and 21 are not anticipated by Breed. Reversal of the anticipation rejection is respectfully requested.

D. REJECTION OF CLAIM 19

Claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Breed in view of Hiwatashi (U.S. Patent No. 6,370,474). Applicant submits that this obviousness rejection should be withdrawn for at least the following reasons.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re

Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). In addition, there must be a reasonable expectation of success. In re Merck & Co., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Furthermore, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). To the extent the Examiner may be relying on the doctrine of inherent disclosure in support of the obviousness rejection, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Claim 19 depends on claim 15. As noted above, Breed clearly fails to teach or suggest all of the claimed features of independent claim 15, i.e., Breed fails to teach or suggest “determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.” In addition, Hiwatashi clearly does not remedy the deficiencies of Breed as applied against parent claim 15 since Hiwatashi has nothing to do with “determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.” In fact, col. 4, l. 23-53 of Hiwatashi cited by the Examiner merely discloses determining “whether the **steering direction** is departing from or is returning to **the reference position . . .** by investigating how the steering wheel has been turned **with respect to an object lane marker which is closer to the vehicle**, i.e., investigating whether the **steering wheel has been turned in the direction of the object lane marker or in the opposite direction of the object lane marker.**” Accordingly, even if one assumes for the sake of argument that there were some motivation for combining the teachings of Breed and Hiwatashi in the manner asserted by the Examiner (which is not conceded by the Applicant), independent claim 15 and its dependent claim 19 are not rendered obvious by the combination of Breed and Hiwatashi.

Independent of the above, claim 19 recites that “a left future track of the vehicle and a right future track of the vehicle are determined, and the left future track and the right future track are compared to left edge markings and right edge markings of the traffic lane.” As discussed above, Hiwatashi merely compares the steering wheel orientation with respect to one lane marker, i.e., **an object lane marker which is closer to the vehicle**, but there is no suggestion of **determining the future tracks** of **both the left and the right sides** of the vehicle, let alone any suggestion of **comparing both the left future track and the right future**

track to the respective left and right edge markings. For at least this additional reason, claim 19 is not rendered obvious by the combination of Breed and Hiwatashi.

In view of the foregoing, reversal of the obviousness rejection of claim 19 is requested.

E. REJECTION OF CLAIM 22

Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Breed in view of Jeon (U.S. Patent No. 6,487,501). Applicant submits that this rejection should be withdrawn for at least the following reasons.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). In addition, there must be a reasonable expectation of success. In re Merck & Co., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Furthermore, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). To the extent the Examiner may be relying on the doctrine of inherent disclosure in support of the obviousness rejection, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Claim 22 depends on claim 15. As noted above, Breed clearly fails to teach or suggest all of the claimed features of independent claim 15, i.e., Breed fails to teach or suggest “determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.” In addition, Jeon clearly does not remedy the deficiencies of Breed

as applied against parent claim 15 since Jeon has nothing to do with “determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.” In fact, the sections of Jeon cited by the Examiner (i.e., col. 3, l. 7-12, and cols. 5 and 6) clearly disclose an automatic steering correction to prevent lane deviation (e.g., “the ECU of an EPS system operates a steering actuator such that the vehicle is controlled to a desired location”), but there is no indication in Jeon regarding “determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.” Accordingly, even if one assumes for the sake of argument that there were some motivation for combining the teachings of Breed and Jeon in the manner asserted by the Examiner (which is not conceded by the Applicant), independent claim 15 and its dependent claim 22 are not rendered obvious by the combination of Breed and Jeon.

Independent of the above, claim 22 recites “**determining a variable representing attentiveness of the driver; and determining a future steering correction by the driver that is used to determine at least one of the track of the vehicle and an extent of a warning of the driver based on the variable.**” Although the Examiner contends that p. 31, l. 22-24 and p. 37, l. 21-30 of Breed discloses “determining a variable representing attentiveness of the driver” and “providing an extent of a warning of the driver based on the variable,” the cited sections do not support the Examiner’s contentions. P. 31, l. 22-24 of Breed merely indicate that the “**system senses the result of the action of the operator, which could occur for a variety of reasons** including old age, drunkenness, heart attacks, drugs as well as falling asleep.” While this statement indicates that there may be various causes for the driver’s action, this statement certainly does not provide any suggestion that any variable representing attentiveness of the driver is determined, let alone “providing an extent of a warning of the driver based on the variable.” In addition, p. 37, l. 21-30 of Breed merely lists the services rendered by the system, but there is no suggestion that any variable representing attentiveness of the driver is determined, let alone “providing an extent of a warning of the driver based on the variable.” Furthermore, to the extent the Examiner contends that col. 3, l. 7-12, and cols. 5 and 6, of Jeon teach “determining a future steering correction by the driver,” Applicant has explained above that Jeon merely discloses an automatic steering correction to prevent lane deviation, but there is no indication in Jeon of “determining a future steering correction by the driver.”

For at least the foregoing reasons, reversal of the obviousness rejection of claim 22 is requested.

F. REJECTION OF CLAIMS 23 & 24

Claims 23 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Breed in view of Russell (U.S. Patent No. 6,675,094). Applicant submits that this obviousness rejection should be reversed for at least the following reasons.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish prima facie obviousness, there must be some suggestion or motivation to modify or combine reference teachings. In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). In addition, there must be a reasonable expectation of success. In re Merck & Co., 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Furthermore, the prior art reference(s) must teach or suggest all of the claim limitations. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). To the extent the Examiner may be relying on the doctrine of inherent disclosure in support of the obviousness rejection, the Examiner must provide a “basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art.” (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Claims 23 and 24 ultimately depend on claim 15. As noted above, Breed clearly fails to teach or suggest all of the claimed features of independent claim 15, i.e., Breed fails to teach or suggest “determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.” In addition, Russell clearly does not remedy the deficiencies of Breed as applied against parent claim 15 since Russell has nothing to do with “determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver.” Accordingly, even if one assumes for the sake of argument that there were some motivation for combining the teachings of Breed and Russell in the manner

asserted by the Examiner (which is not conceded by the Applicant), independent claim 15 and its dependent claims 23 and 24 are not rendered obvious by the combination of Breed and Russell.

For at least the foregoing reasons, reversal of the obviousness rejection of claims 23 and 24 is requested.

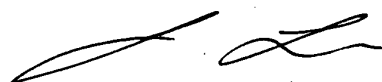
VIII. CONCLUSION

For the foregoing reasons, it is respectfully submitted that the final rejections of claims 15, 16, 18, 19 and 21-24 should be reversed.

Claims Appendix, Evidence Appendix and Related Proceedings Appendix sections are found in the attached pages.

Respectfully submitted,

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APPENDIX TO APPELLANT'S APPEAL BRIEF
UNDER 37 C.F.R. § 41.37

CLAIMS APPENDIX

The claims involved in this appeal, claims 15, 16, 18, 19 and 21-24, in their current form after entry of all amendments presented during the course of prosecution, are set forth below:

15. A method for at least one of providing driver information and performing a vehicle intervention when leaving a traffic lane, the method comprising:

recording at least one boundary of the traffic lane;

determining an anticipated track of a vehicle, taking into account a future, anticipated path correction by the driver;

deriving at least one of the driver information and the vehicle intervention from the at least one boundary of the traffic lane and the anticipated track of the vehicle; and

at least one of: a) providing the driver information when the vehicle one of leaves the traffic lane and threatens to leave the traffic lane; and b) performing the vehicle intervention when the vehicle one of leaves the traffic lane and threatens to leave the traffic lane.

16. The method of claim 15, wherein the anticipated track of the vehicle is determined based on a future, anticipated steering reaction away from side markings of the traffic lane.

18. The method of claim 15, wherein the at least one boundary is recorded using an image sensor system.

19. The method of claim 15, wherein a left future track of the vehicle and a right future track of the vehicle are determined, and the left future track and the right future track are compared to left edge markings and right edge markings of the traffic lane.

21. The method of claim 15, wherein the vehicle intervention includes an automatic intervention in steering in response to a threatened leaving of the traffic lane.
22. The method of claim 15, further comprising:
determining a variable representing attentiveness of the driver; and
determining a future steering correction by the driver that is used to determine at least one of the track of the vehicle and an extent of a warning of the driver based on the variable.
23. The method of claim 15, further comprising:
determining a future possible track of the vehicle as a function of the course of the vehicle in the past.
24. The method of claim 23, wherein the course of the vehicle in the past is determined at least one of from at least one of the yaw rate and the steering angle and using the steering movements of the driver.

EVIDENCE APPENDIX

In the present application, there has been no evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132, or other evidence entered by the Examiner and relied upon by Appellants in the present appeal.

RELATED PROCEEDINGS APPENDIX

No appeal or interference which will directly affect, or be directly affected by, or have a bearing on, the Board's decision in the pending appeal is known to exist.